READINESS AND INTEROPERABILITY OF MULTINATIONAL FORCES IN EASTERN EUROPE: A FRAMEWORK FOR RESOLVING A COMPLEX TASK

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Abstract: The paper aims at development of formal description of the complex task of designing optimal command and control system for the multinational formations in Eastern Europe. It is focusses on the NATO/EU posture for defence and deterrence analysis with an attention to the development of the Bucharest Initiative (B9). The paper proposes Program for Readiness and Interoperability (PRI), oriented to C4ISR / C&I area together with enhanced cooperation in education and training for the defined B9+ region as instrument to project this cooperation using Smart Defence concept and C&I/Support Partnership arrangements with NCIA/NSPA (key NATO Agencies). EU initiatives as PESCO and European defines fund are explored in the context of defining the governance mechanism for the projected cooperation and service provision to multinational / national forces through NATO/EU.

Key words: NATO, EU, Readiness, Interoperability, Smart Defence, C4ISR, Communication and Information, Governance.

1. INTRODUCTION
(NATO presence in Eastern Europe after the changes of 1989 [1])

This paper focuses on the development of multinational formations in Central and Eastern Europe (CEE) / South Eastern Europe (SEE), improving their interoperability and readiness through multinational projects (especially in area of Communications and Information – C&I and in large Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance – C4ISR) and adequate education and training, to include exercises. Further research is proposed in multinational format to define program for readiness and interoperability of multinational formations in CEE/SEE.

NATO was seriously involved in this region with visible presence of military formations since 1995 when IFOR replaced UNPROFOR (originally deployed by UN in 1992). SFOR replaced the IFOR later till the Istanbul Summit of NATO (2004), when the end of the mission was announced. Formally European Union Force (EUFOR) in

Bosnia and Herzegovina replaced SFOR, where the transition was largely a change of name and commanders, but 80% of the troops remained the same.

KFOR was deployed after first really combat operation for NATO in Europe [2]. Forces entered Kosovo in June 1999, after the adoption of UN Security Council Resolution 1244. KFOR numbered 50,000 soldiers and came from 39 different NATO and non-NATO nations.

The introduction of Afghanistan Mission Network (AMN) as an operational tool [3] for multinational forces set a standard for command and control support, influencing even deployments in SEE. Other large operation – Unified Protector was a challenge, but at the same time opportunity to test the readiness and interoperability in Air and Maritime domains [4].

Transition from Crisis Management to defence was most visible at the Wales Summit in 2014, when the NATO allies agreed to implement the Readiness Action Plan (RAP) in order to respond swiftly to the fundamental changes in the security environment on NATO's Eastern borders. Allies took further decisions at the Warsaw Summit in 2016 to strengthen NATO's deterrence and defence posture with forward presence.

Fully deployed in June 2017, NATO's enhanced forward presence comprises multinational forces provided by framework nations and other contributing Allies on a voluntary, fully sustainable and rotational basis.

At the 2016 Summit in Warsaw, Allies also agreed to develop a tailored forward presence in the south-eastern part of Alliance territory. On land, this presence is built around the Romanian-led multinational brigade in Craiova. In the air, several Allies have reinforced Romania's and Bulgaria's efforts to protect NATO airspace.

NATO's rapid reinforcement strategy also ensures that forward presence forces will be reinforced by NATO's Very High Readiness Joint Task Force, the broader NATO Response Force, Allies' additional high readiness forces and NATO's heavier follow-on forces, if necessary.

When the forward presence is mostly focused in North Eastern Europe, we see that the geostrategic importance of the Black Sea is growing [5], especially for Russia after the annexation of Crimea and as a result there is visible confrontation of Russia with NATO [6] in the region.

This force structure and arrangements for reinforcement, especially after establishing of a new Atlantic Command in Norfolk and Logistics Command in Ulm at the Summit in Brussels (2018) opens the opportunity to discuss about the joint force command in the East of Europe (Bulgaria or Romania) with focus on defence but coping with hybrid threats as well.

2. DEVELOPMENT OF INTEROPERABILITY AND READINESS INITIATIVES IN NATO

We could start with the roots of change back to the Prague Summit in November 2002, when NATO recognized that transformation of the military based upon Information Age principles was essential, and pursued a course of transformation, following the concept of **NATO Network-Enabled Capabilities** (NNEC). Already next year, nine NATO nations (Canada, France, Germany, Italy, The Netherlands, Norway,

Spain, The United Kingdom and The United States) funded a feasibility study, assigned to NATO C3 Agency (NC3A). NNEC Program office was established in NC3A to manage all NNEC related common funded projects. In 2009 NC3A recognized a growing demand to support Nations in addition to NATO common funded C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) programs in the development of modern, interoperable and secure C4ISR capabilities, so the agency proposed on 11.11.2009 the **NATO Comprehensive Approach** [7] **to C4ISR** for notation by the NC3 Board.

The C4ISR/Cyber domain in the context of **Federated Mission Networking** (FMN) plays a central role for force integration. In order to accelerate the development in this area, especially for Eastern European NATO members and partners in NC3A (now NCIA), the establishment of a **C4ISR Integration Fund** [8] was proposed in 2010. The implementation of this model started with the C4 Trust Fund for Ukraine led by Canada, UK and Germany and supported by NCIA in 2014.

To the great extent, as approved at the Lisbon Summit in 2010, the Agency Reform initiative for the C4ISR area was endorsing the NATO Comprehensive Approach to C4ISR: provide support to the whole security sector, going outside the defence establishment and to include partners; covering the whole life cycle of C4ISR capabilities from requirements definition to deployment and even decommissioning; using all means of funding – from common funding through multinational and trust fund based funding to individual nations funding.

The comprehensive C4ISR approach was a base of **"Smart Defence"** for capability development and service provision - modelling this area even before its announcement as a flagship NATO initiative at the Chicago Summit in May 2012, when the NATO leaders agreed to embrace Smart Defence [9] to ensure that the Alliance can develop, acquire and maintain the capabilities required to achieve the goals of 'NATO Forces 2020': modern, tightly connected forces that are properly equipped, trained, exercised and led.

In the NATO Executive Development Program (NEDP) cycle of 2013/2014 the two principle NATO agencies asked young leaders in NATO to explore Multinational Cooperation [10] facilitated by NCI Agency and NSPA. In the 2015/2016 cycle of NEDP, the Defence Investment division used the same mechanism to assess Smart defence 5 years later [11].

As an element of Smart Defence in the NCI Agency an approach was developed to support nations in re-using NATO common funded solutions for faster, **born-interoperable** and secure solutions in the area of C4ISR. The initiative was presented at the annual CIO conference in NATO as a program „NATO for Nations" in support to Smart Defence and Connected Forces initiatives of the SecGen. Implementation of this program is based on the „NATO First" solution offered to Nations through the Agency Catalogue [12].

The Agency decided again to benefit from NEDP class of 2015/2016 and initiated a study on the implementation of the „NATO First" solution [13] in support of Smart Defence and Connected Forces initiative.

Main driver for the development of „NATO First" solution for the NATO Force Structure (NFS) [14] was Afghanistan Mission Network (AMN) initiative in response of the request of Gen. McCrystal to have one C2 network for ISAF in 2009 [15].

Decisions at the Wales Summit to establish Readiness Action Plan (RAP) and supporting it with NFIUs (NATO Force Integration Units) in 8 Eastern European NATO Nations changed dramatically the situation with the development of NATO force structure, establishment of multinational formations and defining the model for forward presence on rotational basis with extended exercise program for kind of „Connected Exercises".

Based on the experience with „NATO First" to support the NATO Force structure, many NATO Nations, partners as Finland and Sweden started to use NATO tools in the process of eNRF (enhanced NATO Response Force) and RAP implementation. These efforts include the deployment of 8 NFIUs in a very short period in parallel and transforming the C2 system of MNC NE (Multinational Corps North East) in Poland, deploying new MND SE (Multinational Division South East) HQ in Romania. To address this challenge, internally for NCIA, a program to support these various projects with different funding models, but similar requirements was established [16].

With the decisions at the Warsaw Summit for the **Forward Presence** in Eastern Europe and its enhanced and tailored models, the need for more formal program management was evident for the leadership of the NCIA and partnership mode [17] for this endeavour was developed.

3. NATO/EU READINESS AND INTEROPERABILITY IN EASTERN EUROPE - C4ISR PERSPECTIVE

NATO agreed on a Readiness Initiative in 2018 [18], under the notion of **The Four Thirties**: Allies to have, by 2020, 30 mechanized battalions, 30 air squadrons, and 30 combat vessels ready within 30 days or less.

The big change started in Wales/2014 with the initiation of the Readiness Action Plan, followed by Warsaw NATO agreement on Forward Presence in parallel with closer coordination with EU on areas as mobility, cyber defence, hybrid warfare response and resilience at large.

NATO always was an alliance of interoperability between members, but with the Interoperability initiative at Wales Summit (2014) it is a platform to boost interoperability with key partners as well, based on the experience of ISAF and other operations.

In this context and based on experience going back to 2002 (so more than 15 years of developments) here is proposed a framework for the **(Communications & Information) Program „Readiness and Interoperability (Cyber Resilience)" (PRI)** with initial focus on Bucharest 9 countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia - nations that moved from Warsaw pact to NATO and EU last 20 years), potentially framework nations for rotational battle groups and other formations in the scope of **Forward Presence** as well as related initiatives, including US troops under **Atlantic Resolve/European Defence Initiative.** Program is to cover the further development of multinational formations in Eastern Europe,

including evolution of KFOR and Althea as key elements of military multinational presence in South East Europe.

Such a program starts with the identification of the force structure in Eastern Europe – different NFS elements, other multinational formations under NATO or EU initiatives (for example in South East Europe is the HELBROC Battle Group between Greece, Romania, Bulgaria, Cyprus and with participation from Ukraine and even SEEBRIG, established in 1999 as an instrument for regional defence cooperation in SEE), elements of the national force structure of the host countries to be included in such a large scale interoperability and readiness endeavour.

Stakeholders for PRI are the nations, which force structure elements are covered, leadership of the multinational formations addressed, Allied Command Operations (ACO), Allied Command Transformation (ACT), respective NATO committees, boards and related elements on the European defence side.

Moreover, we see the **B9** (Bucharest cooperation) format as an excellent platform for transforming the NATO-EU cooperation by a new approach to modernize forces of the 9 Nations, increase their NATO/EU readiness and interoperability (incl. cyber resilience), and integrate them with the forward deployed forces of other NATO / EU nations on a rotational basis as well as participation in any expeditionary / intervention forces of NATO or EU.

Poland, Romania and Bulgaria (**POLROB**) are potentially to benefit most from the effective and efficient rearmament and new level of readiness and interoperability of force structure in CEE (both for NATO and EU purposes, but first of all for deterrence and defence to the East and the potentially South-East) through real federation with NATO/EU systems. B9 is providing a solid base for the development of PRI as a practical aspect of cooperation in both, the NATO- and EU- context with a close support of NATO Communications and Information Agency (NCIA) for the C4ISR capabilities development and service provision.

On the Bulgarian side there is an effort since 2014 to define a National Program "Bulgaria in NATO and European Defence" focused on rearmament, that is now moving towards some real projects approved by the Parliament with the Vision 2030 from the civil society calling for a comprehensive and strategic approach to rearmament and in this context for close cooperation with B9-Allies. From Bulgarian prospective including Albania, Montenegro and North Macedonia is of critical importance and in cooperation with Greece this will change the defence posture in the region – Bosna and Herzegovina, Kosovo and Serbia to be engaged on the next step.

Being both, NATO and EU members, the Nations of B9 are in a position to harmonize their requirements and use all available NATO-, EU- and multinational/regional- instruments to build best possible C4ISR/Cyber capabilities for their armed forces in the context of multinational NATO/EU force structures.

The NCIA did a study on external (non-common funded) customers support with **Network Centric Operations Industrial Consortium (NCIOC)** to define the most adequate model, based on the best practices from industry for meeting this challenge. This is a good base for providing support to customer under PRI, outside and without interfering with the common funded programs.

Obviously the C4ISR/Cyber domain is driving innovations, not only in the technology area, but in all other aspects, including business models for cooperation and developing required institutions to make this effort a success for all, nations, NATO, EU, industry, and the academic community.

So, we have a chance to review C4ISR/Cyber related projects / programs in the B9+ countries in the context of implementing RAP/FP and Readiness Initiative / Interoperability Initiative and consolidate the work in the NATO/EU context for saving money, and what is more important, achieve high level of interoperability, security and readiness of the C2 system in the Eastern Flank to include regional countries - members and partners, involving troops rotation nations. NHQ, ACO, ACT, NCIA could play a role, but ownership is for the B9 countries with the involvement of industry and research institutions for the transformational PRI.

Since its establishment in 2012, merging all various 5 NATO C&I agencies, the NCI Agency stated an initiative for the National Chief Information Officers (CIO), together with ACO, ACT, NATO HQ, representatives of NFS, research institutions and industry to define the most effective, efficient and cyber resilient way to interoperability and readiness in C&I domain. These, now traditional, annual CIO conferences [19] paved the way of implementing NATO First Solution and achieving the interoperability and readiness in secure environment, fast, affordable way and easy (NATO R&I SAFE).

Defining PRI as result of the NATO/EU led review of requirements with active implementation of the FMN compliant solutions in cooperation with the industry and NCIA as an executive / support agency will bring practical aspects of Interoperability and Readiness on the new level in the CEE.

PRI need to be fully synchronized with all the exercises, involving forces in CEE along NATO/EU operations, missions, activities and tasks for not just continuous improvement of Interoperability and Readiness, but providing real contribution to deterrence and defence.

Conceptualization of the scope and Governance/Management of the PRI could be done in larger environment of Industry and NGO consultations, but real steps could be taken only by Nations or ACO/ACT, related EU structures. Of course, existing models, implemented for AMN/FMN, environment as DNBL (Distributed Network of Battle Labs) as an instrument to support the program will be used to shape the program.

When it comes to readiness and interoperability, especially of multinational formations, it is not just about the equipment, but mostly about people and their education and training. This is the reason to consider the network of multinational formations in CEE as instrument to foster cooperation in the area of education and training, certification and development of the personnel. It is evident that for the multinational formations, including on the tactical level (battalion battle groups, air squadrons, ships in Readiness initiative for example) the operational language will be English, the procedures will be NATO based and C2 will require NATO 1st Solution.

For such a reason synchronization of education and training programs for officers, non-commissioned officers and even for soldiers has to be achieved around NATO standards. Equally important is the experience from rotation in multinational units. Partnership for Peace Consortium of Defence Academies and Security Studies Institutes, together with the NATO DEEP (Defence Education Enhancement Program) are already

providing a lot through the join work on reference curricula in various fields [20]. These curricula bring NATO Allied and also NATO partner Professional Military Education (PME) closer together, bringing standards closer, but also bringing intellectual interoperability. Same is true for the efforts of the European Security and Defence College, which is part of the European External Action Service. It has focused efforts to bring common standards to education and training in EU wide professional military education [21].

While it is often important to distinguish between education and training, they are mutually inclusive activities. Education and training, together with experience, are necessary for the complete development of the military personnel. Interoperability in both education and training is the critical gateway to endow a nation's armed force with the ability to live up to and to meet national security responsibility in an international security environment where working closely with Allies and partners is crucial.

4. GOVERNANCE AND MANAGEMENT OF PRI

Review of the development of NATO/EU military presence in SEE, development of readiness and interoperability initiatives in NATO and requirements to deterrence and defence forces structure in the region from both NATO and EU prospective brings us to formal task to:

- Identify a set of multinational (MN) formations {F} and define their future development in order to "shape, respond and prepare" for the current and future security challenges;
- Arrange optimal command structure for them in NATO/EU context – C, based on selection among a set of alternatives {C};
- Define common readiness (R) and interoperability (I) requirements {R&I} for the {F}, integrated by C;
- Develop an optimal architecture for systems {S} of Cm meeting {R&I};
- Develop mechanism to define a budget for transformation of C&I systems – B, collected from the set of Nations {N};

in order to establish governance (G) and management (M) structures to achieve I and R required, using available B for most effective C of {F}, that results in a multinational program (P), consisting of several projects (p), supported by NCIA/NSPA and using PESCO/EU defence fund arrangements (A) for the B9+ nations to acquire systems {S}, where the program P includes education (E) and training (T) required.

This is a complex task of architecture development for {S} with organizational design, institution building and change management with G and M of P (p, E, T), using B, A in the area of optimal use of ICT (C4ISR) to achieve requirements {R&I} of C for {F}.

For the practical results of resolving such a complex task we could add assumptions of using the available building blocks as NATO Force Structure (NFS) and EU battle groups (EUBG) for {F} with the solution for C to be found in the context of the development of the NATO Command structure (NCS) to be used by EU as well. B could be defined in the framework of defence pledge and proportional commitment to MN formations, use of N1S for {S} and available solutions for G and M in the framework of

Smart Defence / Pooling and Sharing and more specifically C&I Partnerships with NCIA and Support Partnerships with NSPA. There is NATO/EU framework for E and T as well to be used as toolbox in defining P.

This formal model and its link with the available frameworks / toolboxes is proposed in order to reduce the uncertainty and complexity in finding the optimal solutions for SEE in due time (3-5 years) and at lowest cost, using the best available technologies under the NCIA Basic Ordering Agreement program (BOA).

At the highest level the solution includes CIO conference of the Nations involved, supported by a secretariat to organize the decision making process in solving the above complex task by CIOs and after that provide the oversight for the implementation of P by partnership arrangements with NCIA / NSPA.

5. CONCLUSION
(Regional cooperation – is consolidation possible?)

Analysis of the development of NATO (EU) presence in CEE/SEE, especially through multinational formations – from IFOR to battle groups of eFP in Baltic states and Poland, the EU battle groups (as HELBROC in South Eastern Europe) on first level, followed by division / corps level HQs and up to NCS - provides input to identify requirements for interoperable C2 system on tactical level, directly connected to operational / strategic level and respective training requirements for the personnel in these multinational formations.

Of course, the most serious challenge is to define the roadmap for the development of the multinational formations in Eastern Europe in NATO/EU Framework. Important is to stress that multinationality on the tactical level – battalions, squadrons, ships are what matters most of all, because it is about real use on daily basis of NATO procedures, N1S systems for C2 and demonstration of the solidarity. These tactical units will be a model for the national units of the same type (size), but being under multinational governance / C2 will maintain the readiness and interoperability required by the Readiness Initiative and will have better chances to be committed for deployment without caveats.

Based on the large pool of tactical multinational units it is much easier to nominate higher level multinational HQs for managing of training and readiness and for planning and C2 in case of activation.

Such an organization will facilitate multinational projects for C4ISR interoperable systems, but for other equipment / armaments as well. These multinational projects could be managed by extended national agencies but may be even better option is to use NCIA/NSPA with a dedicated joint office (JONA) for SEE.

Last but not least is the third pillar – organization for the education and training – from individual to collective, from field to computer assisted exercises.

In conclusion – it is important to consolidate the existing structure of multinational formations and develop a roadmap for its further development in CEE/SEE with special focus on multinational C4ISR projects and joint education and training for improved interoperability and readiness. The landscape of security and defence could be changes

dramatically, real transformation in defence could take place in the region and the overall resilience will be improved.

Further research is required to develop the business case for PRI, to define the governance and management model for the program, technology roadmaps and specific requirements to education and training (incl. exercises) for implementation of the forward presence in CEE/SEE, fostering NATO-EU and regional cooperation.

This paper limits itself to define the formal description of the task with respective frameworks / toolboxes to support its resolution in the next 10 years of closer cooperation between NATO, EU and member nations / partners in the region of CEE/SEE.

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